

ABSTRACT OF THE DISCLOSURE

A recording mark train is formed in an optical recording medium including a noble metal oxide layer by decomposing a noble metal oxide
5 and deforming the noble metal oxide layer. Noble metal particles are irreversibly deposit in the noble metal oxide layer formed with the recording mark train and a laser beam for reproducing data is irradiated onto the thus deposited noble metal particles, thereby reading the recording mark train. The recording mark train includes at least one
10 recording mark having a length shorter than $0.37\lambda / NA$ wherein λ is the wavelength of the laser beam and NA is an optical system for irradiating the laser beam. According to the present invention, in the case of recording and reproducing a recording mark having a size smaller than the resolution limit or a recording mark having a size equal to or larger
15 than the resolution limit but close to the resolution limit in this manner, a high reproduction output can be obtained and a high reproduction durability can be achieved for each of the all recording marks in the recording mark train.